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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/072,743	02/07/2002	Ronnie M. Harrison	3758.2US (97-0153.1)	4046
24247	7590	06/30/2005	EXAMINER	
TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110			NGUYEN, DONGHAI D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

C

Office Action Summary	Application No. 10/072,743	Applicant(s) HARRISON ET AL.	
	Examiner Donghai D. Nguyen	Art Unit 3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10, 11 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11 and 16-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/15/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on April 15, 2005 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5,200,362 to Lin et al.

Regarding claim 16, Lin et al disclose a method of fabricating an integrated circuit package, the method comprising: providing a semiconductor die (15) having a plurality of conductive pads (inherent because the die must have the pads for interconnect to the circuit pattern); forming at least two conductors (13, see Fig. 8), each conductor of the at least two conductors having a first end (the inner end) and a second end (along the transfer film) and a generally arcuate-shaped portion between the first and second ends, at least a portion of each

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generally arcuate-shaped portion exhibiting a constant radius, and forming the generally arcuate-shaped portion of at least one of the at least two conductors to include a plurality of segments including at least one straight segment and at least one generally arcuate segment; configuring and positioning the at least two conductors such that line spacing between the generally arcuate-shaped portion of each of the at least two conductors is constant from their respective first ends to their respective second ends (see Fig. 8); electrically coupling the first ends of each of the at least two conductors with at least one of the plurality of conductive pads (16); and encapsulating the semiconductor die and at least a portion of the at least two conductors with an insulating material (20).

Regarding claims 17-18, Fig. 8 of Lin et al exhibit the plurality of segments having at least three segments with at least one segment of the plurality of segments to exhibit a different length than at least one other segment of the plurality of segments.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al in view of US Patent 4,807,018 to Cellai.

Regarding claim 1, Lin et al disclose a method of fabricating an integrated circuit package, the method comprising: providing a semiconductor die (15) having a plurality of

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conductive pads (inherent because the die must have the pads for interconnect to the circuit pattern); forming at least two conductors (13 see Fig. 8), each conductor of the at least two conductors having a first end (inner ends) and a second end (along the side of element 12) and a generally arcuate-shaped portion between the first and second ends, at least a portion of each generally arcuate-shaped portion exhibiting a constant radius; configuring and positioning the at least two conductors such that line spacing between each of the at least two conductors is constant from their respective first ends to their respective second ends (see Fig. 8); electrically coupling the first ends of each of the at least two conductors with at least one of the plurality of conductive pads (16, See Fig. 2); and encapsulating the semiconductor die and at least a portion of the at least two conductors with an insulating material (20, see Fig. 3). However, Lin et al do not teach a leadframe including at least two conductors. Cellai teaches the lead frame (13) including at least two conductors (18) for providing good electrical contact and good mechanical and thermal connection (See Col. 1, lines 49-63). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Lin et al by utilizing the teaching of leadframe having plurality of conductor as taught by Cellai in order to form an integrated circuit having good electrical contact and good mechanical and thermal connections.

The Fig. 8 meets all the limitations of claims 2-8, 10, and 11. Fig. 8 shows each of the two conductors (13) having three different segment, different arc length including constant radius throughout the entire arc length and substantially 90 degrees arc with the first and second ends of at least two conductors to be positioned at orientations of substantially 90 degrees relative to each other.

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Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art references cited for the teaching of fabricating an integrated circuit package.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (571)-272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN
June 24, 2005



**PETER VO
SUPERVISORY PATENT EXAMINER
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